Michigan Department of Community Health

Newborn Screening for NICU Infants < 1800 Grams Provider Fact Sheet

Newborn screening and premature infants
Newborn Screening is an important part of infant health maintenance. However, like so many other programs designed primarily for the healthy term baby, newborn screening of the premature, low birth weight, and ill infants is not a simple or straightforward process. The neonates' immaturity and the necessary therapeutic interventions combine to interfere with both the collection of samples and the interpretation of newborn screening results.

Why should premature infants be screened differently?
Premature infants should be screened differently to minimize both the false positive and false negative results in these small babies. Collecting three specimens from each infant, and viewing the results together, will give a clearer picture of the neonate's risk for the disorders included in Michigan's screening panel.

How should the specimens be collected?
Specimens should be collected on the blue screening cards at 24-36 hours after birth, unless the infant receives blood. In this case, obtain the specimen prior to blood administration including ECHMO (Extracorporeal Membrane Oxygenation). Repeat specimens are obtained on pink cards at 14 and 30 days of age or upon discharge if discharge is prior to 14 or 30 days of age. Ordering all three screens upon the infant's admission to the NICU will be most efficient. If the baby goes home after the 2nd specimen, then that is the last specimen.

Why obtain specimen before transfusion?
If the infant requires transfusion before 24 hours of age, collect the initial specimen pre-transfusion and the next specimen at 14 and 30 days of age or upon discharge. A pre-transfusion specimen is essential for detection of galactosemia, sickle cell disease, and biotinidase deficiency. If the infant receives a blood transfusion before the screen is collected, the newborn screen must be repeated 90 days post-transfusion. Results from a post transfused specimen are not valid and may represent a false negative.

Are these screens done differently than regular newborn screens?
No. The laboratory testing is the same. Clinicians will still be notified of all abnormal results.

Are the reports different?
The report format is the same for all newborns except as noted below. Please follow instructions on the reports in obtaining repeats when requested.

The following situations are reported differently for infants in the NICU:

- If the initial screen for congenital adrenal hyperplasia (CAH) is positive, the report will suggest clinical evaluation of the infant and a repeat screen at 14 days of age. Positive results on repeat screens will be treated the same way as positive results in other babies.
- If the amino acid pattern is consistent with total parenteral nutrition (TPN) on the initial or 14 day sample, no special action will be recommended; the next screening sample will simply be requested. Only if the result is consistent with TPN on the 30 day specimen is the request made to measure plasma amino acids when the child is receiving full enteral feedings.

Any questions about requests for repeats or infant status in relationship to testing can be answered by medical management centers.

Where can I get additional information?

- Newborn Screening NICU Provider Manual for Michigan is available on-line at: http://www.michigan.gov/newbornscreening Hard copy versions of the manual are provided to Michigan's NICU coordinators.
- The staff of the Newborn Screening Program at the Michigan Department of Community Health is available to answer your questions at 1-866-673-9939.

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